E Logistics for Warehouse Management

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Abstract: To gain a competitive advantage over increasing competition, organizations must constantly adapt to customer demand, vendor compliance initiatives and multi-channel issues. A synchronized warehouse process can maximize the organization's facility while improving workforce performance and facility management. When was the last time there was an objective and a strategic approach/look at the organization's warehouse operations? Warehouse Management solutions enable real time coordination of goods and activities within their warehouse. Logistics management is the process of strategically managing the procurement, movement and storage of materials, parts and finished inventory and the related information. E-logistics helps in Customer Relationship Management Logistics Planning provides Seamless Supply Chain Integration E-logistics in enhancing Production Capacity Results in sourcing Multiple ORDERS items from Multiple Supplies and Consolidation Helps in Order Scheduling, Tracking, Inventory Fulfillment, Invoicing Web-based technology which gives In-transit Visibility and Exception Notification Warehouse, Storage and Distribution Services Inventory Management Enhances and improves the Order Fulfillment Pick, Pack and Ship Operations View updated route schedules automatically to see if a driver is ahead/behind on their route.

Key words: Organizations must constantly · Synchronized warehouse · Facility management · Strategically managing

INTRODUCTION

According to the Council of Logistics Management (CLM), logistics is the process of planning, implementing and controlling the efficient effective flow and storage of goods, services and related information from point of origin to point of consumption for the purpose of conforming to customer requirements. Fast information systems are needed to collect customer data on product requirements. In most cases, short order lead-time is the key factor in the success of the supply chain management model [1-6]. This can be achieved by using fast communication links not only between the company and customer but also between manufacturers, wholesalers, traders and suppliers. E-commerce has become a popular trend for conducting business transactions.

Admin is the super user of the web based software. Admin can control the users.. Logistic management is the management process which integrates the flow of supplies into, through and out of organization to achieve a level of service which ensures that the right materials are available at the right place, at the right time, of the right quality at the right cost [7]. Logistics Management is that part of a Management Solution that plans, implements and controls the efficient, effective forward and reverse flow and storage of goods, services and related information between the point of origin and the point of consumption in order to meet customers' requirements."

Modules:

- Customer details and Administration
- Sales Orders
- Warehouse Management
- Automated Billing from Order
- Reports

Customer Details and Administration: Provides the details about customer and Administation.

Sales Orders: Sales order is a contract between the company and the user. It is an order issued by a business to a user.

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Warehouse Management: A warehouse management system is a key part of the supply chain and primarily aims to control the movements and storage of materials within a warehouse and the process associated transactions, including shipping, receiving, put way and picking.

Automated Billing from Order: The customer checks the branch details and order the particular material also enter his nearest branch. If the item stock is available in the nearest branch then purchase it. Otherwise inform the administrator to deliver items to the next nearest branch.

Reports: Contains the reports for transactions.

Sales and Inventory Management System: Main objective of implementing sales and inventory management system project is to design a efficient automated application for automation of different functionalities inside organization. Just not limiting to management functionalities we can also generate reports which will help in managing a company this feature will improve standard of inventory system in billing, services and sales.

Sales and Inventory Management System. is a complete business solution manager for an industry which stores the sales and stock information manually. This project is divided into various modules which record information regarding the sales and Inventory, category, Product, customer, warehouse, Carrier, supplier order, Invoice, Inventory Order etc. Admin is the key Module for SAIMS. This Module is useful for the Administrator to define the Master Entities like products, categories, customers, ware house, carriers, suppliers and users etc. and Transaction entities like sales requests, exports and order confirmations etc. required for the Bussiness. Here Sales manager is the Admin for Sales and Inventory Management System. Customer Module is used to track the sales order details. Ware house module defines the ship shipment details like delivery, dispatch, slip generation, inventory update etc.

Inventory Management System: We carefully selected the highest quality materials to ensure customer satisfaction. These mainly use product sales. Corporate Department structure to create and maintain products, customer and other supplier information along with user profiles.

Inventory management is still considered the most important managerial task in logistics operations. At the end of business processes in goods-producing companies, materials are exchanged. Therefore, inventory management plays a significant role in making products available at the right time, at the right place and, of course, at minimum cost. In ventory management involves the planning, co-ordination and control of material flow along the logistics value chain. Basically, this involves determining what to store, where and how much.

Good inventory management requires effective ordering and physical count systems. This, in turn, requires systems, such as Manufacturing Resource Planning (MRPII), Distribution Requirements Planning (DRP)and Enterprise Resource Planning (ERP). The management of inventories should also include the equipment for the handling of goods and materials. There is no doubt that IT/IS such as MRP II, RFID and ERP have helped to manage inventory along the supply chain in a more cost effective manner and made possible the provision of improved logistics services to customers.

Inventory management in E-Logistics requires real-time information so that the volumes and locations of different materials can be tracked and updated. A web-assisted inventory control system will help all the parties involved in logistics services and in the control of material flow by determining the volume, timing and locations of the goods that should be made available. Classifying goods into ABC items [8].

Can help control inventories with a much better focus on important products. Enterprise resource planning systems such as SAP, BAAN, Oracle, JD Edwards and PeopleSoft will play a major role in planning for materials flow along the logistics value chain. Inventory control methods such as JIT and Kanban help minimize inventory costs and, at the same time, provide a high level of customer service by delivering goods in the right quantity, at the right time and at the right place. Packing and consolidation can be done such that the levels of inventory can be managed and transportation costs reduced [9]. This will result in more resources being made available at competitive prices and in increasing demand for logistics services. This will also help a company to understand and meet customers' expectations.

Management: Should have access to all screens, views and sales data with full keyword, search word and responsible capabilities. Should have dash board to display all menus with product catalog, customer catalog, warehouse catalog, supplier catalog, sales order, purchasing order, stocks and inventory order.

Sales and Marketing: Should be able to process sales order, access data stocks carts in various warehouses.

Scope of work assigned:
 Admin:
 Master Entities (Data):

- Product Categories,
- Products.
- Customers
- Data Ware Houses.
- Carriers.
- Suppliers and Users.

Transactions Module:

- Sales requests.
- Sales Order Confirmations.

Customer Module: Using this module customer logs and tracks his sales order details such as

- Confirmed order
- Out of work
- Shipment pending
- Delivered
- Invoice Details such as billed and to be paid….etc

Warehouse Module: Using this module, warehouse manager logs in and tracks the goods to be shipped.

- Goods to be shipped.
- Shipping Slip Generations
- Generate Dispatch order
- Update Inventory

Project Methodology: The   software development lifecycle consists of the following phases.

- Requirements Analysis
- Process flow Design
- Data flow Design
- Entity Relationship Design
- Coding
- Functional Testing

Requirements   Analysis   is   the   process   of collecting   the   requirements   from   the   end   user. The process and data modeling are performed based on the user inputs.

Process flow Design delivers the process flow diagrams, which map the clients' business processes pictorially.

Data flow Design delivers the data flow diagrams, which map the clients' business processes data flow pictorially.

Entity Relationship Design depicts an ER diagram for the technical details of the database.

Coding the Modules provides the screens for users interaction.

Functional Testing involves Black box testing where the system is tested from the user point view by providing test cases and test plans.

Information Management: Good logistics management is heavily reliant on the availability of accurate information. IT plays a major role in bringing all parties, including customers and suppliers, to a single platform in an integrated logistics system to provide cost-effective and quality logistics services. The importance of IT in logistics management is highlighted by the fact that customers can track, trace and generate advanced logistics reports so that timely decisions can be made and corresponding actions taken. Many companies are trying to develop a seamless information system so that more accurate and timely information can be exchanged to help decision-making and provide competitive logistics services. Several commercial information systems are available for use in planning distribution requirements. With the help of the Internet, logistics has become global and that too with shorter delivery cycles. Nowadays, web-based information systems are widely used to track orders and communicate with both customers and suppliers to help companies to stay competitive internationally.

The Internet, Intranet, Extranet and WWW are enabling tools in the emerging digital economy. For E-Logistics, a suitable information system, in particular, a web-based system, is essential for providing competitive logistics services. Effective E-Logistics requires identifying   potential markets and partners, shared IS for gathering data about markets, advertising, conducting   transactions   between   suppliers   and customers and integrating the activities of extended enterprises. A global positioning system (GPS) can be used to pinpoint shipments in transit [10], whether they be by rail, truck or sea. It can track and monitor the transportation assets and cargo from origin to destination throughout the journey.

An E-Logistics management system consists of (i) warehouse management systems which perform inventory control, replenishment, reverse logistics and invoicing; and   (ii) a fleet management system that

performs task assignments, route planning, scheduling, load planning, order-tracking, etc. Depending upon the scope of the logistics companies involved an appropriate information network that supports electronic brokerage and 14contracting, electronic meetings and collaboration including electronic payments and banking, business transactions and on-line information services, is essential. B2B2C ecommerce can be used for integrating the activities of suppliers and customers along the logistics value chain. This demonstrates the importance of Internet, Intranet and Extranet technologies.

CONCLUSION

In the present world Computers are playing avital role in all walks o life. In the field of medicine, industry, agriculture etc computers are made unavoidable. Computerization is spread to more work-areas of human society.

All organization whether small or large is computerizing their areas that help to reduce manual work and time saving. The large storage capacities of the computers help to store wide range of data and their manipulation within a short period.

The project "E-LOGISTICS FOR WAREHOUSE MANAGEMNET" is developed to perform the activities performed in an organization. It was made operational after going through a series of phases namely Study Phase, Analysis, Design phase and Coding followed by testing and Evaluation.

After considering the various feasible solutions the most feasible one was selected for designing. Taking into consideration the time and efficiency constraints. This software has a user friendly nature so that user can easily perform the updations and access the required information. Adequate and prompt error messages are given to the user when validation rules are violated.

REFERENCES

1. David Sklar and Adam Trachlenberg, 2002. PHP Cookbook, O'Reilly.
2. Janet Valade, 2005. PHP and My SQL Everyday Apps for Dummies,Wiley Publishing.
3. Paul Dubois, 2002. My SQl Cookbook, O'Reily.
4. Rasmus Lerdorf and Kevin Tatroe, 2002. Pragramming PHP, O'Reily.
5. Jason, W., 2002. Gilmore, Beginning PHP 5 ans My SQL5 From Novice to Professional, Appress.
6. Kerana Hanirex, D. and K.P. Kaliyamurthie, 2013. Multi-classification approach for detecting thyroid attacks, International Journal of Pharma and Bio Sciences, 4(3): B1246-B1251.
7. Khanaa, V., K. Mohanta and T. Saravanan, 2013. Comparative study of uwb communications over fiber using direct and external modulations, Indian Journal of Science and Technology, 6(suppl 6): 4845- 4847.
8. Kumar Giri, R. and M. Saikia, 2013. Multipath routing for admission control and load balancing in wireless mesh networks, International Review on Computers and Software, 8(3): 779-785.
9. Kumaravel, A. and K. Rangarajan, 2013. Routing alogrithm over semi-regular tessellations, 2013 IEEE Conference on Information and Communication Technologies, ICT 2013.
10. Kumaravel, A. and K. Rangarajan, 2013. Algorithm for automaton specification for exploring dynamic labyrinths, Indian Journal of Science and Technology, 6(suppl 6).